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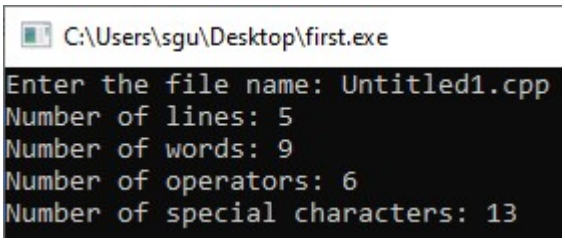
Experiment: 1. File handling to count no of lines, words, operators special character in given file
Class: TY CSE A, 31

File used for the experiment:

```
#include<iostream>
using namespace std;
int main() {
	cout<<"Hello";
}
```



Code:

```
#include <iostream>
#include <fstream>
#include <cctype>
#include <string>

using namespace std;

bool isOperator(char ch) {
   return (ch == '+' || ch == '-' || ch == '*' || ch == '/' ||
ch == '=' ||
           ch == '%' || ch == '<' || ch == '>' || ch == '&' ||
ch == '|' ||
           ch == '^' || ch == '!' || ch == '~' || ch == '?' ||
ch == ':' ||
           ch == ';');
}

int main() {
   string filename;
   ifstream file;
   string line;
   int lineCount = 0, wordCount = 0, operatorCount
= 0, specialCharCount = 0;

   // Ask the user for the file name
   cout << "Enter the file name: ";
   cin >> filename;

   // Open the file
   file.open(filename);

   // Check if the file was opened successfully
   if (!file) {
      cerr << "Error opening file!" << endl;
      return 1;
   }

   // Read the file line by line
   while (getline(file, line)) {
      lineCount++;
      bool inWord = false;

      // Process each character in the line
      for (char ch : line) {
         if (isalnum(ch)) {
            // If the character is alphanumeric, we are
in a word
            if (!inWord) {
               wordCount++;
               inWord = true;
            }
         } else {
            inWord = false;
         }

         // Check for operators
         if (isOperator(ch)) {
            operatorCount++;
         }

         // Check for special characters (anything that
is not a letter, digit, or whitespace)
         if (!isalnum(ch) && !isspace(ch)) {
            specialCharCount++;
         }
      }
   }

   // Close the file
   file.close();

   // Output the results
   cout << "Number of lines: " << lineCount <<
endl;
   cout << "Number of words: " << wordCount <<
endl;
   cout << "Number of operators: " <<
operatorCount << endl;
   cout << "Number of special characters: " <<
specialCharCount << endl;
   return 0;
}
```